

annually to reflect any changes in usage, safety issues, etc.

Remedial Maintenance refers to correcting significant defects in the network, as well as repairing, replacing or restoring major components that have been destroyed, damaged, or significantly deteriorated from normal usage and old age. Some items (“minor repairs”) may occur on a five to ten year cycle such as repainting, seal coating asphalt pavement or replacing signage. Major reconstruction items will occur over a longer period or after an event such as a flood. Examples of major reconstruction remedial maintenance include stabilization of a severely eroded hillside, repaving a trail

Longevity of Facilities	
Mulch	2-3 years
Granular stone	7-10 years
Asphalt	7-15 years
Concrete	20 + years
Boardwalk	20 + years
Bridge/Underpass/Tunnel	100 + years

surface or a street used for biking. Remedial maintenance should be part of a long-term capital improvement plan.

All facilities will require repair or replacement at one time or another. The repair or replacement of existing facilities should be reflected in a projected budget for future maintenance costs. The time between observation and repair/replacement will depend on whether the needed repair is deemed a hazard, to what degree the needed repair will affect the safety of the user, and whether the needed repair can be performed by an in-house maintenance crew or if it is so extensive that the needed repair must be done by outside entities or replaced completely. Some repairs are minor, such as repainting or resurfacing crosswalks, and can be done in conjunction with other capital projects, such as repaving the adjacent street. The following tasks should be performed on an as needed basis to keep network facilities in good, usable condition.

Action Steps for O&M

- Develop risk management strategy
- Conduct annual inspections of all pedestrian and greenway



Figure 5 (e):
Remedial Maintenance Activities

- facilities and address any issues or problems as necessary
- Develop accurate and organized record-keeping process
- Update signage, contact information, and educational/outreach materials at greenway facilities
- Allocate a budget for operational and routine and remedial maintenance activities
- Obtain sustainable funding sources to meet the needs of the budget
- Maintain facilities in routine and remedial fashion

5.5 Staffing

The proper staffing for implementation, operation, and maintenance tasks described above is described here. The Committee described in Section 5.2 would be comprised of representatives from the departments described below and help oversee all activities.

Planning and Engineering Departments

First and foremost is the need for the Town to create a Pedestrian Coordinator position or deliver these tasks to a current Town planner or engineer with the capacity to task of implementing this Plan. The Coordinator would lead the effort to apply for funding, oversee planning, design, and construction of pedestrian facilities. The Coordinator would lead and assign tasks such as coordinating programming, leading public outreach, staff training on pedestrian issues, monitoring the use of and demand for pedestrian facilities, reporting to the planning and engineering departments, and proposing future alternative routes. The coordinator would also ensure coordination with surrounding municipalities (Fuquay-Varina, Apex, Cary, and Wake County) and with regional trail systems such as the American Tobacco Trail and East Coast Greenway.

The planning and engineering departments have other important roles. These include being responsible for site plan review to ensure pedestrian-friendliness, particularly in large residential and commercial development. Also, pedestrian-related GIS and mapping should be maintained, consolidated, and updated by GIS staff as new greenways and sidewalks are constructed. It is recommended that coordination occur between departments to construct a single, maintained pedestrian GIS layer (sidewalk and greenways) for the Town with informative attributes that include sidewalk width, length, material, etc.

Public Works Department / Town Engineering

The Public Works Director should oversee the construction and maintenance of all trail and pedestrian facilities. The Public Works section devoted to Streets should also be devoted to future recommendations for the pedestrian networks, discussed earlier in this plan. One member of the Public Works should handle facility development and construction (including posting pedestrian signs) among his/her other responsibilities.

North Carolina Department of Transportation

NCDOT Division Five should maintain pedestrian facilities within the roadway rights-of-way that are owned by the State. This only includes crosswalk facilities. The Town of Holly Springs is responsible for the maintenance of ALL sidewalks through Town. The Town can seek State funding through the Powell Bill to repair sidewalks (See Appendix D).

Parks and Recreation Department

Duties for the Park and Recreation Department would include carrying out the greenway recommendations from this Plan, applying for funding, and overseeing all greenway facilities. Staff should also conduct tasks such as updating and publishing new maps, creating and updating GIS layers of all greenway facilities, proposing future alternative routes, and working with adjacent communities/counties to coordinate linkages to other greenways. The Parks and Recreation Director and/or staff should also play a role in education and encouragement programs.

Police Department

All local police officers should be educated about North Carolina's pedestrian laws to promote positive interactions between pedestrians and motorists. The Guide to North Carolina Bicycle and Pedestrian Laws, written by the NCDOT Division of Bicycle and Pedestrian Transportation, should be distributed to local law enforcement. Police officers should become more proactive in educating the public and enforcing laws when they are broken.

Volunteers

Services from volunteers, student labor, and seniors, or



*Figure 5 (f):
The Parks and Rec Department duties
should include carrying out the greenway
recommendations from this Plan.*

donations of material and equipment may be provided in-kind, to offset construction and maintenance costs. Formalized maintenance agreements, such as adopt-a-trail/greenway or adopt-a-highway can be used to provide a regulated service agreement with volunteers. Other efforts and projects can be coordinated as needed with senior class projects, scout projects, interested organizations, clubs or a neighborhood's community service to provide for the basic needs of the proposed networks. Advantages of utilizing volunteers include reduced or donated planning and construction costs, community pride and personal connections to the City's greenway and pedestrian networks.

5.6 Establishing Performance Measures (Evaluation and Monitoring)

The Town of Holly Springs should work with local advocacy organizations to establish performance measures to benchmark progress towards achieving the goals of this Plan. These performance measures should be stated in an official report within one to two years after the Plan is adopted. Baseline data should be collected as soon as the performance measures are established. The performance measures should address the following aspects of pedestrian transportation and recreation in Holly Springs:

- Safety. Measures of pedestrian crashes or injuries.
- Usage. Measures of how many people walking on on-road and off-road facilities.
- Facilities. Measures of how many pedestrian facilities are available and the quality of these facilities.
- Education/Enforcement. Measures of the number of people educated or number of people ticketed as a part of a pedestrian safety campaign.
- Institutionalization. Measures of the total budget spent on pedestrian and greenway projects and programs or the number of municipal employees receiving pedestrian facility design training.

When establishing performance measures, the Town should consider utilizing data that can be collected cost-effectively and be reported at regular intervals, such as in a performance measures report that is published every two to three years. As the process of collecting and reporting pedestrian and greenway data is repeated over time, it will become more efficient. The data will be useful

for identifying trends in non-motorized transportation usage and conditions.

It will also be a responsibility of the Committee to evaluate and monitor the existing and recommended network over the next 25 years. The Committee should review process and progress and evolve and adapt as needed. Land use, transportation, development, and the overall landscape will continue to change as Holly Springs grows resulting in a dynamic area. Also new opportunities or input from an on-going monitoring and evaluation process may emerge, leading to the need to adapt and update the recommendations of this Plan.

5.7 Pedestrian Facility Development

This section describes different construction methods for the proposed pedestrian facilities outlined in Chapter 3 of this Plan.

Please note that many types of transportation facility construction and maintenance projects can be used to create new pedestrian facilities. It is much more cost-effective to provide pedestrian facilities during roadway and transit construction and reconstruction projects than to initiate the improvements later as “retrofit” projects.

This section describes types of transportation facility construction and maintenance projects that can be used to create new pedestrian facilities. Note that roadway construction and reconstruction projects offer excellent opportunities to incorporate facility improvements for pedestrians. It is much more cost-effective to provide a pedestrian facility along with these other projects than to initiate the improvement later as a “retrofit.”

To take advantage of upcoming opportunities and to incorporate pedestrian facilities into routine transportation and utility projects, the “Pedestrian Coordinator” should keep track of the Town’s projects (through the Public Works Department) and any other local and NCDOT transportation improvements. While doing this, he/she should be aware of the different procedures for state and local roads and interstates. More detail on facility design and treatment can be found in Chapter 6.

NCDOT Transportation Improvement Program (TIP) Process

The Transportation Improvement Program (TIP) is an ongoing program at NCDOT which includes a process asking localities to present their transportation needs to state government. Pedestrian facility and safety needs are an important part of this process. Every other year, a series of TIP meetings are scheduled around the state. Following the conclusion of these meetings, all requests are evaluated. Pedestrian improvement requests, which meet project selection criteria, are then scheduled into a four-year program as part of the state's long-term transportation program.

There are two types of projects in the TIP: incidental and independent. Incidental projects are those that can be incorporated into a scheduled roadway improvement project. The pedestrian underpass at NC 55 Bypass and Utley Creek was an incidental project in the State's TIP. Independent are those that can stand alone such as a greenway, not related to a particular roadway.

The Town of Holly Springs, guided by the Pedestrian Coordinator, should strongly consider important pedestrian projects along State roads to present to CAMPO and to the State. Local requests for small pedestrian projects, such as sidewalk links, should be directed to the relevant NCDOT Highway Division office. Further information, including the criteria evaluated can be found at: http://www.ncdot.org/transit/bicycle/funding/funding_TIP.html

Local Roadway Construction and Reconstruction

Pedestrians should be accommodated any time a new road is constructed or an existing road is reconstructed. All new roads with moderate to heavy motor vehicle traffic should have sidewalks and safe intersection attributes. The Town of Holly Springs should take advantage of any upcoming construction projects, including roadway projects outlined in local comprehensive and transportation plans. Also, case law surrounding the ADA has found that roadway resurfacing constitutes an alteration, which requires the addition of curb ramps at intersections where they do not exist.

Residential and Commercial Development

As detailed in Chapter 4, the construction of sidewalks and safe crosswalks should be required during development. Construction begins on a blank slate and the development of pedestrian facilities

that corresponds with site construction is more cost-effective than retro-fitting. In commercial development, emphasis should also be focused on safe pedestrian access into, within, and through large parking lots. This ensures the future growth of the pedestrian network and the development of safe communities

Retrofit Roadways with New Pedestrian Facilities

There may be critical locations in the proposed Pedestrian Network that have pedestrian safety issues or are essential links to destinations. In these locations, it may be justified to add new pedestrian facilities before a roadway is scheduled to be reconstructed or utility/sewer work is scheduled.

In some places, such as Main Street, it may be relatively easy to add sidewalk segments to fill gaps, but other segments may require removing trees, relocating landscaping or fences, regrading ditches or cut and fill sections.

Bridge Construction or Replacement

Provisions should always be made to include a walking facility as a part of vehicular bridges, underpasses, or tunnels, especially if the facility is part of the Pedestrian Network. All new or replacement bridges should accommodate pedestrians with wide sidewalks on both sides of the bridge. Even though bridge replacements do not occur regularly, it is important to consider these in longer-term pedestrian planning. NCDOT bridge policy states that sidewalks shall be included on new NCDOT road bridges with curb and gutter approach roadways. A determination of providing sidewalks on one or both sides is made during the planning process. Sidewalks across a new bridge shall be a minimum of five to six feet wide with a minimum handrail height of 42".

Signage and Wayfinding Projects

Signage along specific routes or throughout an entire community can be updated to make it easier for people to find destinations. Pedestrian route and greenway signs are one example of these wayfinding signs, and they can be installed along routes independently of other signage projects or as a part of a more comprehensive wayfinding improvement project.



*Figure 5 (g):
Provisions should be made to include walking facilities such as tunnels and bridges when deemed necessary.*

5.8 Greenway Acquisition



*Figure 5 (h):
Forming partnerships with land trusts and
land managers makes more effective use
of land acquisition funds and strategies for
greenways.*

There are several resources and strategies that can aid in the acquisition process. Enlisting the support of a local land trust could help broker land protection arrangements between private landowners and the Town of Holly Springs. Providing educational material to local landowners and developers about the benefits of greenways and land/easement donations is also an excellent means to stimulate greenway acquisition.

The following sections detail a list of specific strategies including the formation of partnerships and a toolbox of acquisition options.

Partnerships

The Town of Holly Springs should pursue partnerships with land trusts and land managers to make more effective use of its land acquisition funds and strategies. The following offers recommendations on how these partnerships could be strengthened

Land Trusts

Land trust organizations, such as the Trust for Public Lands and Triangle Land Conservancy, to name just two, are valuable partners for the Town of Holly Springs and Wake County, when it comes to acquiring land and rights-of-way for greenways. These groups can work directly with landowners and conduct their business in private so that sensitive land transactions are handled in an appropriate manner. Once the transaction has occurred, the land trust will usually convey the acquired land or easement to a public agency, such as the City or County for permanent stewardship and ownership.

Private Land Managers

Another possible partnership that could be strengthened would be with the utility companies that manage land throughout Holly Springs and in Wake County.

Electric utility companies have long recognized the value of partnering with both local communities, non-profit trail organizations and private land owners to permit their rights-of-ways to be used for trail development. This has occurred all over the United States and throughout North Carolina. In 1987, a

special report was prepared and published jointly by American Trails, Inc. and the Edison Electric Institute, entitled, *Trails on Electric Utility Lands: A Model of Public-Private Partnership*. The report features examples where trails and electric utility companies share the right-of-way. Some of the trails included in the report are the Calumet Trail, Foothills Trail, Illinois Prairie Path, Interurban Trail and Puget Power, Redmond Trail, Mason Dixon Trail and the Washington and Old Dominion Trail.

Natural gas companies, whose pipelines traverse the United States, have also allowed their rights-of-way to be used for trail development. This cooperative spirit may have been modified a bit since the events of September 11, 2001, however, there are plenty of examples throughout North Carolina and the nation where shared rights-of-way exist. Again, a publication entitled “Greenways, Wildlife and Natural Gas Pipeline Corridors: New Partnerships for Multiple Use,” written by Keith G. Hay, and published in 1994 by the Conservation Fund, Arlington, VA, chronicles the success of this partnership. Some key excerpts from the book:

- Although 82% of the [gas transmission companies] companies reported that they had never had a liability suit filed by a recreational user of a ROW (right-of-way) corridor, concern over expensive lawsuits prevails. Each of the 13 companies that reported a liability suit were contacted to determine the nature of the liability action. In every lawsuit filed except one (a logging accident crossing a ROW), the plaintiff was driving either an ATV or a snowmobile on the ROW. All ATV drivers were trespassing.
- Potential partnerships with public groups should be viewed very positively and companies should be prepared to do some grassroots legwork with these groups. Many companies have found such efforts have paid off in facilitating the issuance of permits and increasing public support for projects. Such initiatives are highly recommended.
- Potential public interest partners have well-developed



*Figure 5 (i):
Public easements, such as sewer, can be
adapted into trail corridors.*

avenues for publicizing their cooperative ventures with utilities. Companies would be well advised to take advantage of these opportunities to promote the positive aspects of these associations.

- Benefits to the utility. Eastern Trail shares its corridor with the following utility companies: Granite State Gas Transmission Company, Northern Utilities Natural Gas, Central Maine Power, Verizon and Biddeford, Scarborough Sanitation District and Saco Water Company.

“Partnerships on greenways like the Eastern Trail provide utility companies with an uninterrupted, easily accessible, stretch of land that is relatively free from disturbance. The safe and efficient operation of utilities can be enhanced by the protective eyes and ears of trail users and advocates, who can report improper trail use and other situations that involve utility equipment.”

The Town of Holly Springs should actively update and maintain relationships with private utility and land managers to ensure that community wide pedestrian and greenway system can be accommodated within these rights-of-way. The Town and county will need to demonstrate to these companies that maintenance will be addressed, liability will be reduced and minimized and access to utility needs will be provided.

Acquisition Tools

Because the majority of greenways exist in an off-road environment, the acquisition of land or easements becomes a critical part of the implementation process.

The following resources and tools can aid in the acquisition process:

Land Management

Management is a method of conserving the resources of a specific greenway parcel by an established set of policies called management plans for city-owned greenway land or through easements with private property owners. Property owners who grant easements retain all rights to the property except those, which have been described in the terms of the easement. The property owner is responsible for all taxes associated with the property, less the value of the easement granted. Easements are generally restricted to certain portions of the property, although

in certain cases an easement can be applied to an entire parcel of land. Easements are transferable through title transactions, thus the easement remains in effect perpetually. The following tools can be used as land management techniques.

- Management Plans
- Conservation Easement
- Preservation Easement
- Public Access Easements

Government Regulation

Regulation is defined as the government's ability to control the use and development of land through legislative powers. The following types of development ordinances are regulatory tools that can meet the challenges of projected suburban growth and development as well as conserve and protect greenway resources.

- Dedication/Density Transfers
- Negotiated Dedications
- Fee-in-Lieu
- Reservation of Land
- Buffer / Transition Zones
- Overlay Zones
- Subdivision Exactions

Acquisition

Acquisition requires land to be donated or purchased by a government body, public agency, greenway manager, or qualified conservation organization. The following acquisition tools can be useful when change in a property ownership is needed.

- Donation or Tax Incentives
- Fee Simple Purchase
- Easement Purchase
- Purchase / Lease Back
- Bargain Sale
- Option / First Right of Refusal
- Purchase of Development Rights
- Condemnation
- Eminent Domain

